

The Coccinellidae (excluding Epilachninae) collected by J. Klapperich in 1977 on Taiwan

(Insecta, Coleoptera)

By Yu Guoyue

Yu, G. (1995): The Coccinellidae (excluding Epilachninae) collected by J. Klapperich in 1977 on Taiwan (Insecta, Coleoptera). – Spixiana 18/2: 123–144

82 species of Coccinellidae (excluding Epilachninae) are enumerated from Taiwan. Among them 9 species are new records for Taiwan and the following 10 species are described as new: *Sticholotis linguiformis*, *Stethorus klapperichi*, *S. muriculatus*, *Scymnus grammicus*, *S. bifurcatus*, *S. phylloides*, *S. novenus*, *S. petalinus*, *S. bistortus*, *Cryptogonus robustus*.

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Introduction

156 species of Coccinellidae have been recorded from Taiwan (Sasaji 1988, 1991), and recently Yu & Pang (1992a,b) described additional three new species from Taiwan, but there are still many more species undescribed or unrecorded. The present paper is a list of the specimens of the family Coccinellidae (excluding subfamily Epilachninae) collected in Taiwan by J. Klapperich during 1977. This collection is fairly rich and contains more than 1,500 individuals. 82 species have been identified, of which 10 are new to science (another 5 have or will be published elsewhere) and 9 (labelled with *) are new records for Taiwan. The specimens (including types) will be preserved in Zoologische Staatssammlung München, Germany (ZSM) and South China Agricultural University, Guangzhou, China (SCAU).

Before going further, I wish to acknowledge my gratitude to Prof. H. Fürsch of Passau University, cooperater of ZSM, who kindly gave me the opportunity to examine the valuable material, and I also wish to express my cordial thanks to Prof. Pang Xiongfei for his constant guidance and encouragement to my study.

Subfamily Sticholotidinae

1. *Microserangium okinawense* Miyatake, 1961

Specimens examined: 1♂, 1♀, 2-V-1977, Shanmei (600 m).

Distribution: Taiwan; Ryukyus.

2. *Serangium japonicum* Chapin, 1940

Specimen examined: 1♀, 3-IV-1977, Taipei (30 m).

Distribution: Taiwan, Shaanxi, Zhejiang, Fujian, Guangdong, Guangxi, Yunnan; Japan, Korea.

3. *Shirozuella mirabilis* Sasaji, 1967

Specimens examined: 2♂♂, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan.

4. *Shirozuella appendiculata* Yu & Pang, 1992

Specimens examined: 1♂, 28-IV-1977; 1♂, 7-VI-1977, both from Alishan (2.400 m).

Distribution: Taiwan.

5. *Shirozuella alishanensis* Yu & Pang, 1992

Specimen examined: 1♂, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan.

6. *Nesolotis shirozui* Sasaji, 1967

Specimen examined: 1♀, 14-V-1977, Fenchihu (1.400 m).

Distribution: Taiwan.

7. *Sticholotis morimotoi* Kamiya, 1965

Specimens examined: 1♂, 2♀♀, 15-IV-1977; 3♀♀, 30-IV-1977; 4 exs., 13-VI-1977; 2 exs., 8-V-1977; 1♀, 14-V-1977; 2 exs., 23-IV-1977, all from Fenchihu (1.400 m).

Distribution: Taiwan; Ryukyus.

8. *Sticholotis linguiformis*, spec. nov.

Fig. 1

Types. Holotype: ♂, No. 920402-1, 2-V-1977, Shanmei (600 m), Taiwan, J. Klapperich leg. (ZSM). - Allotype: ♀, 23-III-1989, Chebaling (Shixing County), Guangdong, Yu Guoyue leg. (SCAU).

Description

Body length: 2.0-2.26 mm, width: 1.76-1.82.

Body short, oval, strongly convex with whitish pubescence. Head brown with black eyes; pronotum yellowish-brown; elytra brown with four pairs of brown spots: one pair at base, situated on calli, connected with elytral base; one pair at disc, situated at $\frac{2}{5}$ elytral length, the diameter of the spot about as wide as its distance to suture; one pair near middle of elytral length; one pair at suture, confluent, situated at $\frac{3}{4}$ of elytral length. Underside including legs yellowish-brown. Colouration slightly darker in female.

Interocular distance of frons about $\frac{3}{5}$ width of head; interocular margins posteriorly distinctly divergent. Dorsal surface with relatively fine punctures, separated by about their diameter. Prosternal carinae distinct, anteriorly divergent, anterior margin distinctly carinate. Postcoxal line incomplete, nearly extending to hind margin of 1st abdominal segment, with a few coarse punctures at inner corner. Hind margin of segments V and VI in male distinctly emarginate, in female rounded.

Male genitalia. Sipro without inner process of siphonal capsule. Tegmen stout. Basal piece of tegmen dorsally produced in a long process, but distinctly shorter than median strut. Median piece widest at base, narrowing gently to apex in lateral aspect, distinctly longer than lateral lobes. Median piece in basal half nearly parallel, then divergent apically with a widely rounded tip in ventral aspect.

Hemisternite as figured.

Remarks. The new species is similar to *S. vietnamicus* Hoang, 1982 in colouration, but the latter has the discal spots connected with each other, its siphonal capsule is developed, and the median piece narrows gently to a pointed tip.

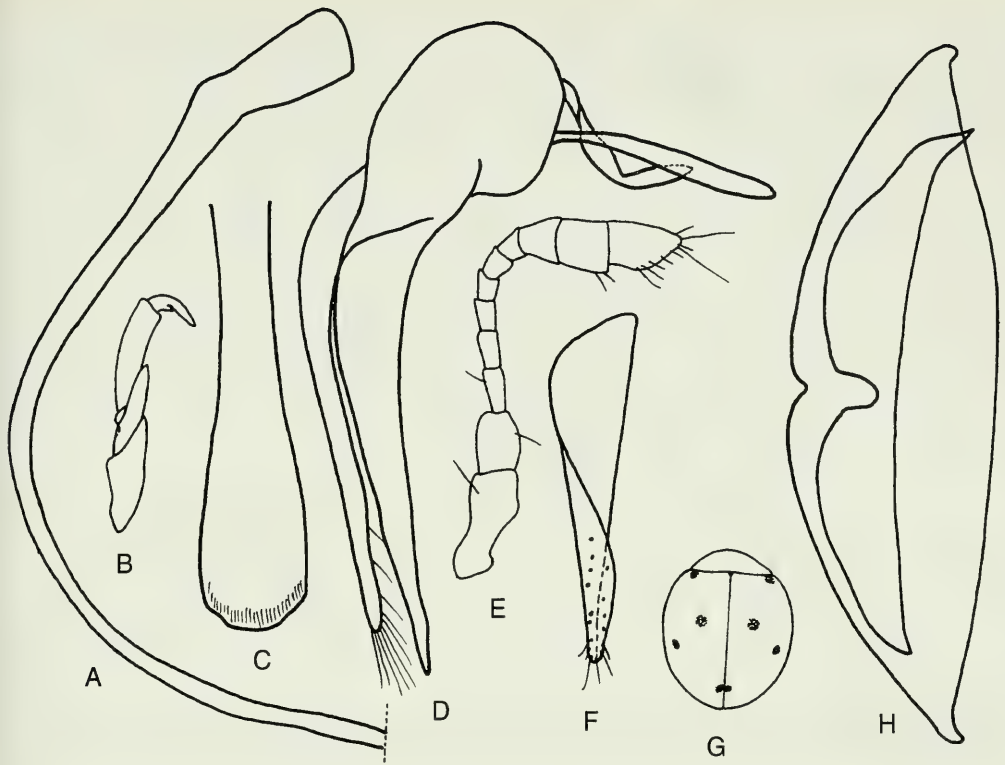


Fig. 1. *Sticholotis linguiformis*, spec. nov. A. Siphon (without apex); B. Tarsus; C. Median piece, ventral aspect; D. Tegmen, lateral aspect; E. Antenna; F. Hemisternite; G. Outline of the body; H. Fifth and sixth abdominal segment of δ .

9. *Jauravia limbata* Motschulsky, 1858

Specimens examined: 2 f , 3-IV-1977; 1 m , 2 f , 23-IV-1977; 1 f , 30-IV-1977; 1 f , 19-V-1977; 1 m , 25-V-1977; 1 ex., 14-V-1977; all from Fenchihu (1.400 m).

Distribution: Taiwan, Yunnan; India, Sri Lanka, Nepal, Thailand.

Subfamily Scymninae

* 10. *Stethorus aptus* Kapur, 1948

Specimens examined: 1 m , 2-V-1977, Shanmei (600 m); 1 f , 23-V-1977, Shanmei (600 m); 1 f , 10-IV-1977, Fenchihu (1.400 m); 2 f , 15-IV-1977, Fenchihu (1.400 m); 1 f , 3-IV-1977, Taipei (30 m); 1 f , 5-IV-1977, Wulai (Tapei, 200 m).

Distribution: Zhejiang, Fujian, Guangdong, Guangxi, Taiwan; Japan, Malaysia.

11. *Stethorus klapperichi*, spec. nov.

Fig. 2

Types. Holotype: m , No. 920421 (10-VI-1977, Fenchihu (1.400 m), Taiwan). - Allotype: f (same data as holotype). - Paratypes: 2 m , 10-VI-1977; 2 m , 28-IV-1977, all from Fenchihu (1.400 m). All types are deposited in ZSM except one paratype in SCAU.

Description

Body length: 1.35-1.47, width: 1.0-1.12 mm, L/W: 1.30-1.35.

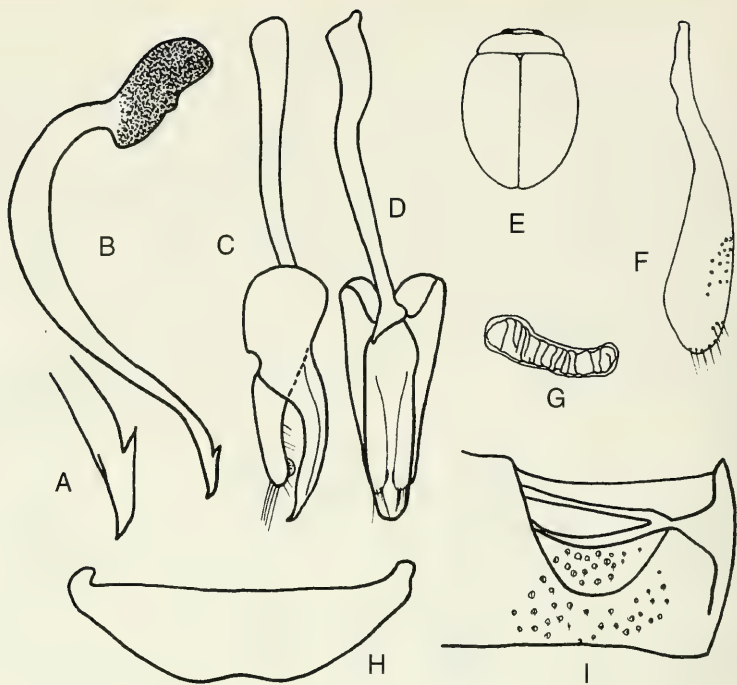


Fig. 2. *Stethorus klapperichii*, spec. nov. A. Apex of siphon; B. Siphon; C. Tegmen, lateral aspect; D. ditto, ventral aspect; E. Outline of the body; F. Hemisternite; G. Receptaculum seminis; H. Fifth abdominal segment of ♂; I. First abdominal segment.

Body oval, with sides moderately arcuate in dorsal aspect. Dorsum moderately convex with dense yellowish-white pubescence. Body black, but eyes, antennae, mouthparts and legs brown. Interocular distance about $\frac{3}{5}$ width of head; interocular margins nearly parallel in front view, slightly divergent posteriorly. Elytral punctures similar to those of pronotum, separated by about their diameter. Post-coxal line complete, extending to a little more than half of length of 1st abdominal segment; area surrounded by the line with more than 10 coarse punctures. Hind margin of segment VI distinctly emarginate in male.

Male genitalia. Siphon short and stout, siphonal capsule distinct and developed, black in colouration, consisting of a strongly flattened outer process and a very short, indistinct inner process. Apical part of siphon hook-shaped. Tegmen also stout, median piece nearly parallel at basal $\frac{1}{5}$ in ventral aspect; apical part of the median piece curved tergally in lateral aspect. Lateral lobes distinctly shorter than median piece with very fine setae at inner surface; preapex of lateral lobes with a distinct expansion at inner surface; basal piece of tegmen longer than the main part.

Female genitalia as figured.

Remarks. The new species resembles *S. yezoensis* Miyatake, 1966 and *S. binchuanensis* Pang & Mao, 1975 in the structure of the siphon and the postcoxal line, but is easily separated from them by abdominal segment VI of male with distinctly emarginate hind margin and lateral lobes of the tegmen expanded preapically at their inner surface.

12. *Stethorus muriculatus*, spec. nov.

Fig. 3

Types. Holotype: ♂, No. 920423, (13-VI-1977, Fenchihu (1.400 m), Taiwan). - Allotype: ♀ (same data as holotype). - Paratypes: 1♂, 4♀, 13-VI-1977; 1♂, 1♀, 9-IV-1977; 1♀, 10-IV-1977; 1♀, 15-IV-1977; 1♂, 23-IV-1977; 1♂, 30-IV-1977; 1♀, 10-V-1977; 1♂, 3♀, 14-V-1977; 1♀, 19-V-1977; 1♂, 3♀, 30-V-1977; 1♀, 7-VI-1977, all from Fenchihu (1.400 m); 1♂, 1♀, 28-IV-1977, 3♂♂, 3♀♀, 10-VI-1977, both from Alishan (2.400 m), 2♀♀, 5-IV-1977, Wulai (Taipei, 200 m). All types are deposited in ZSM, but 8 paratypes in SCAU.

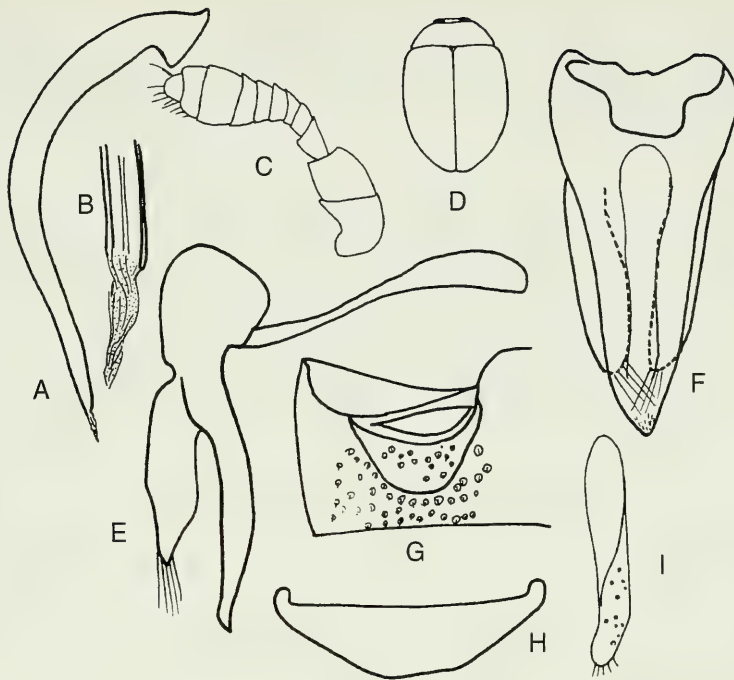


Fig. 3. *Stethorus muriculatus*, spec. nov. A. Siphon; B. Apex of siphon; C. Antenna; D. Outline of the body; E. Tegmen, lateral aspect; F. ditto, ventral aspect; G. First abdominal segment; H. Sixth abdominal segment of ♂; I. Hemisternite.

Description

Body length: 1.32-1.52 mm, width: 0.85-1.0 mm, L/W: 1.52-1.55.

Body small, elongately oval with relatively weakly arcuate sides, about 1.5 times as long as wide, dorsum moderately convex. Body overall black, but eyes, mouthparts, antennae, tibiae and tarsi dark brown.

Interocular distance about $\frac{1}{2}$ width of head; interocular margins of head divergent posteriorly; punctures on frons sparse, finer than facets. Pronotal punctures fine on disc, coarser on lateral part; elytral punctures coarser and sparser than pronotal ones. Postcoxal line complete, rather widely rounded, extending to $\frac{3}{5}$ of length of 1st abdominal segment; area surrounded by the line with more than 10 strong punctures, narrowly smooth along the line. Apical margin of segment VI subtruncate or very slightly emarginate in male.

Male genitalia. Siphon relatively short, very stout, nearly as long as tegmen including the median strut, very weakly curved through entire length; siphonal capsule undeveloped, without distinct inner and outer process. Siphonal apex with a small nodule-like projection. Tegmen fairly stout, median piece of tegmen moderately broad, widest at base, about $3 \times$ as long as wide in middle, gently narrowing apically with a pointed tip in ventral aspect. Lateral lobes distinctly shorter than median piece, nearly parallel at basal $\frac{2}{3}$, then distinctly narrowing.

Hemisternite of female genitalia as figured.

Remarks. The new species resembles *S. yezoensis* Miyatake, 1966, but differs from the latter by apex of siphon without a hook-like projection and lateral lobes with sides parallel at basal half and narrowing distinctly at apical half. It also resembles *S. chengi* Sasaji, 1968, but the latter has a siphonal capsule with a semicircular flattened outer process and extremely slender and linear hemisternites.

13. *Stethorus* sp.

Specimen examined: 1 ♀, 3-IV-1977, Taipei (30 m).

Remarks. The species is very small (length: 0.94 mm, width: 0.79 mm), and lateral sides of body narrow distinctly to apex of elytra.

* 14. *Diomus brunsuturalis* Pang & Gordon, 1986

Diomus brachsiphonus Pang & Huang, 1986 (syn. nov.)

Specimens examined: 1 ♂, 2 ♀ ♀, 3-IV-1977, Taipei (30 m); 1 ♀, 5-IV-1977, Wulai (Taipei, 200 m).

Distribution: Hainan, Fujian, Guangdong, Taiwan, Sichuan; Vietnam.

Remarks. The four examined specimens are variable in colouration, from entirely brown to a black triangular marking at base of elytra, to black elytra with brown apex. I examined the holotype of *brachsiphonus* and found that the punctures in the median part are coarse and distinct.

15. *Keiscymnus securiformis* Yu & Pang, 1992

Specimen examined: 1 ♂, 10-VI-1977, Fenchihu (1.400 m).

Distribution: Taiwan.

* 16. *Nephus (Nephus) dilepismoides* Pang & Pu, 1988

Specimens examined: 2 ♂ ♂, 3 ♀ ♀, 4-III-1977, Taipei (30 m).

Distribution: Guangxi, Taiwan.

Remarks. The examined specimens have relatively wide apex of siphon, as compared with the types.

* 17. *Nephus (Nephus) quadrimaculatus* (Herbst, 1783)

Specimen examined: 1 ♂, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan, Palaearctic Region.

18. *Nephus (Sidis) tagiapatus* (Kamiya, 1965)

Specimen examined: 1 ♀, 3-IV-1977, Taipei (30 m).

Distribution: Taiwan, Guangdong; Ryukyus, Thailand, Malaysia, India.

19. *Nephus* sp.

Specimen examined: 1 ♀, 30-IV-1977, Fenchihu (1.400 m).

20. *Axinoscymnus beneficus* Kamiya, 1963

Specimen examined: 1 ♂, 15-IV-1977, Fenchihu (1.400 m).

Distribution: Hainan, Guangdong, Taiwan; Japan

21. *Axinoscymnus* sp.

Specimen examined: 1 ♀, 5-IV-1977, Wulai (Taipei, 200 m).

Remarks. The specimen is small in size and brown in colouration.

*** 22. *Pseudoscymnus sylvaticus* (Lewis, 1896)**

Specimens examined: 3♂♂, 4♀♀, 15-IV-1977; 3♂♂, 2♀♀, 23-IV-1977; 1♀, 30-IV-1977; 2♂♂, 1♀, 8-V-1977; 1♀, 14-V-1977; 2♀♀, 25-V-1977; 1♂, 7-VI-1977; 1♂, 1♀, 13-VI-1977, all from Fenchihu (1.400 m).

Distribution: Taiwan; Japan, Korea.

23. *Pseudoscymnus nagasakiensis* (Kamiya, 1961)

Specimens examined: 1♂, 3-IV-1977, Taipei (30 m); 3♀♀, 2-V-1977; 2♀♀, 23-V-1977, both from Shanmei (600 m).

Distribution: Taiwan; Japan.

24. *Pseudoscymnus fulvihumerus* Yang & Wu, 1972

Specimens examined: 1♂, 1♀, 2-V-1977, Shanmei (600 m).

Distribution: Taiwan.

25. *Pseudoscymnus fuscus* Yang, 1971

Specimens examined: 3♂♂, 1♀, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan.

26. *Pseudoscymnus changi* Yang, 1971

Specimen examined: 1♂, 19-V-1977, Fenchihu (1.400 m).

Distribution: Taiwan.

27. *Pseudoscymnus orbiculatus* Yang, 1971

Specimens examined: 1♂, 28-IV-1977; 1♂, 1♀, 10-VI-1977, all from Alishan (2.400 m).

Distribution: Taiwan.

28. *Pseudoscymnus anmashanus* Yang, 1971

Specimens examined: 2♂♂, 1♀, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan.

29. *Pseudoscymnus quinquepunctatus* (Weise, 1923)

Specimens examined: 1♀, 30-IV-1977; 1♂, 19-V-1977, 1♀, 3-VI-1977, all from Fenchihu (1.400 m); 1♂, 6-V-1977, Yangmingshan-Gebirge (Taipei); 1♀, 5-IV-1977, Wulai (Taipei, 200 m).

Distribution: Taiwan; Ryukyus.

30. *Pseudoscymnus kurohime* (Miyatake, 1959)

Specimens examined: 1♂, 30-IV-1977, Wulai (Taipei, 200 m); 1♂, 6-V-1977, Yangmingshan-Gebirge (Taipei).

Distribution: Taiwan, Fujian, Guangdong, Guangxi, Guizhou, Yunnan; Japan, Vietnam.

31. *Pseudoscymnus hareja* (Weise, 1879)

Specimen examined: 1♀, 23-IV-1977, Fenchihu (1.400 m).

Distribution: Taiwan; Japan.

32. *Scymnus (Scymnus) grammicus*, spec. nov.

Fig. 4

Types. Holotype: ♂, No. 910515-1, Taiwan (Fenchihu), 14-V-1977, J. Klapperich (deposited in ZSM).

Description

Length: 2.47 mm, width: 1.53 mm.

Body elongate, oval, moderately convex with yellowish-white pubescence. Head brown with grey eyes; pronotum brown; scutellum black; elytra black with apical $\frac{1}{5}$ brown; venter brown with black pterothorax.

Interocular margins arcuate, anteriorly convergent, separated by less than $\frac{1}{2}$ width of head; head large, about $\frac{3}{4}$ width of pronotum, with large mandible; puncturation on head irregular, coarser than facets, denser along the eyes, on median part of frons punctures separated by their diameter. Anterior margin of pronotum slightly concave, anterior corners nearly rectangular, posterior ones relatively round; punctures similar to those on head in size, separated by half their diameter. Scutellum wider than long. Elytra with distinct calli, punctures coarser and sparser than those on pronotum, separated by about their diameter. Prosternum with broad intercoxal carinae, extending to anterior margin, slightly convergent anteriorly, length about $2 \times$ width at base. Postcoxal line incomplete, extending to $\frac{3}{4}$ length of 1st abdominal segment; area surrounded by the line finely punctured, smooth along the line; punctures on the middle of segment I-III coarser than on lateral parts. Hind margins of segments V-VI slightly and widely emarginate in male.

Male genitalia. Siphon moderately stout and long, with short outer process and long inner one of siphonal capsule; basal half of siphon strongly curved, semicircular; apex of siphon long thread-like, without any appendix. Tegmen stout; lateral lobes distinctly longer than median piece, broad in lateral aspect; median piece boat-shaped, with a pointed tip, in ventral aspect widest at middle.

Remarks. There are several species of *Scymnus* with long siphon occurring in the Oriental region, e.g. *Scymnus (Scymnus) longmenicus* Pang, 1986, *S. (Pullus) tenuis* Yang, 1978, and *S. (P.) longisiphonatus* Hoang, 1982. However, this new species can be easily separated from the latter two by the boat-like median piece, incomplete postcoxal line and broad separated prosternal carinae.

33. *Scymnus (Scymnus) bifurcatus*, spec. nov.

Fig. 5

Types. Holotype: ♂, No. 910515-2, Taiwan (Fenchihu), 7-VI-1977 (ZSM). - Allotype: ♀, same data as holotype (ZSM). - Paratypes: 1♂, same data as holotype (ZSM); 3♀♀, 9-IV-1977 (ZSM); 1♂, 1♀, 10-IV-1977 (ZSM); 1♂, 3♀♀, 23-IV-1977 (ZSM); 1♀, 30-IV-1977 (ZSM); 3♂♂, 5♀♀, 10-V-1977 (SCAU); 5♂♂, 6♀♀, 25-V-1977 (ZSM); 1♂, 30-V-1977 (SCAU); 1♀, 3-VI-1977 (SCAU); 8♀♀, 13-VI-1977 (ZSM), all from Fenchihu (1.400 m); 1♀, 2-V-1977, Shanmei (600 m) (SCAU).

Description

Length: 2.0-2.65 mm, width: 1.35-1.94 mm.

Body oval, moderately convex with yellowish-white pubescence, weakly S-shaped arranged on elytra. Head brown in male, black in female, both with black eyes; pronotum brown with a large black mark at base; scutellum dark brown, elytra black with posterior $\frac{1}{5}$ brown; prosternum brown; meso- and metasternum black; abdomen brown with central part of base brown; legs brown.

Interocular margins slightly incurvate, separated by half of width of head; puncturation on head coarse, larger than facets, punctures separated by half their diameter. Pronotum with anterior and posterior corners round, but the latter more widely round; pronotal punctures similar to those on head in size, separated by about their diameter. Scutellum triangular, wider than long. Elytra distinctly wider than pronotum, with indistinct calli; elytral punctures coarser than those on pronotum, separated by 0.5-1.0 of their diameter. Prosternal carinae narrow, distinctly constricted in basal half, almost parallel in anterior half, length about $3.5 \times$ width at base. Postcoxal line complete, extending to $\frac{3}{5}$ of length of 1st abdominal segment; area surrounded by the line irregularly punctured in anterior half, smooth along the line; punctures on median part of this segment smaller than on lateral parts. Hind margin of segments V-VI straight in male, round in female.

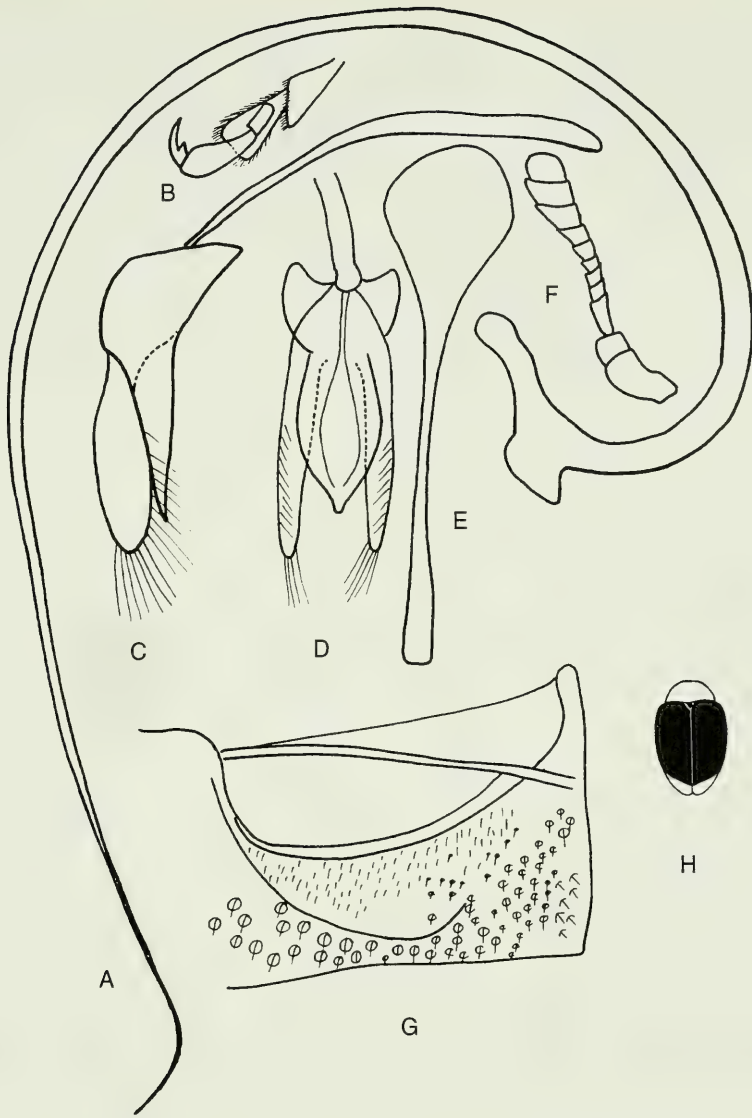


Fig. 4. *Scymnus (Scymnus) grammicus*, spec. nov. A. Siphus; B. Tarsus; C. Tegmen, lateral aspect; D. ditto, ventral aspect; E. Ninth sternite of ♂; F. Antenna; G. First abdominal segment; H. Outline of the body.

Male genitalia. Siphus stout with indistinct outer process and long inner one of siphonal capsule; apical $\frac{1}{3}$ of siphus slightly swollen; apex of siphus sclerotized bifid, surrounded by a membrane. Tegmen stout with distinctly longer lateral lobes; lateral lobes broad in lateral aspect; median piece tapering to tip in lateral view with widest part near base in ventral aspect.

Remarks. This new species resembles *Scymnus (Scymnus) tsushimaensis* Sasaji, 1970, but the latter differs in: 1. apex of siphus with short membranous hook, without sclerotized part; 2. hind margin of V in male relatively distinctly emarginate; 3. pronotum black with narrow anterior margin and lateral portions reddish-brown; 4. median piece relatively narrow in ventral aspect.

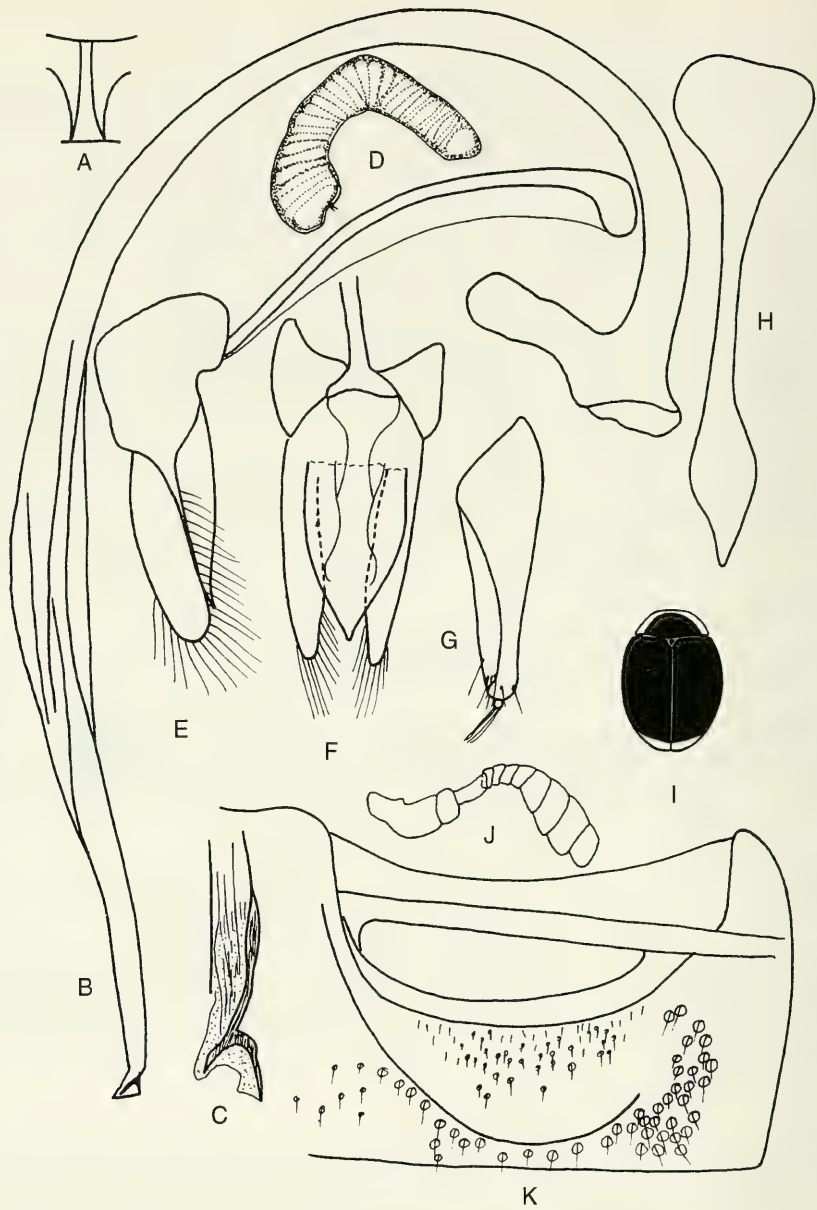


Fig. 5. *Scymnus (Scymnus) bifurcatus*, spec. nov. A. Median part of prosternum; B. Siphon; C. Apex of siphon; D. Receptaculum seminis; E. Tegmen, lateral aspect; F. ditto, ventral aspect; G. Hemisternite; H. 9th sternite of ♂; I. Outline of body; J. Antenna; K. First abdominal segment.

34. *Scymnus (Pullus) perdere* Yang, 1978

Scymnus (Pullus) nepenthus Pang & Huang, 1985: 32.

Specimens examined: 154 exs., 9-IV/13-VI-1977, all from Fenchilu (1.400 m).

Distribution: Taiwan, Fujian, Guangdong, Zhejiang.

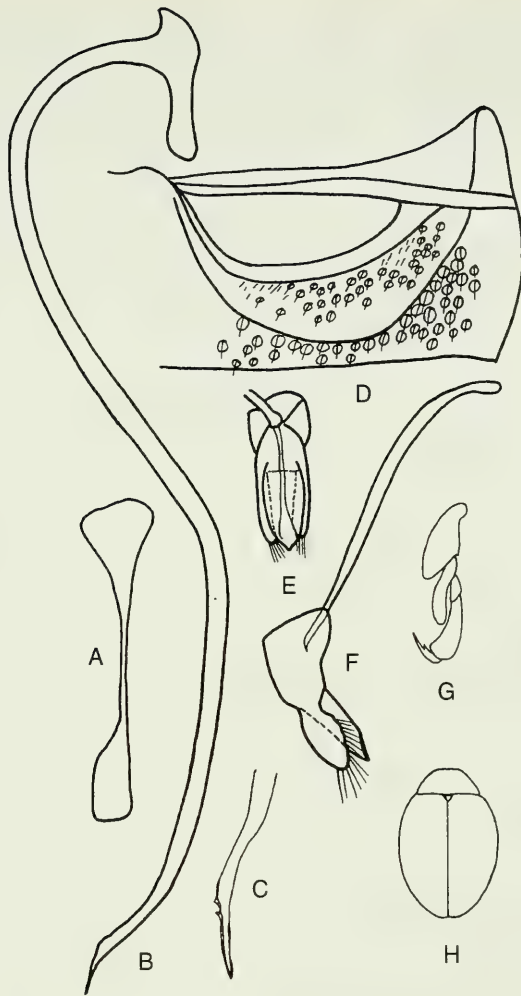


Fig. 6. *Scymnus (Pullus) phylloides*, spec. nov. A. Ninth sternite of ♂; B. Siphus; C. Apex of siphus; D. First abdominal segment; E. Tegmen, ventral aspect; F. ditto, lateral aspect; G. Tarsus; H. Outline of the body.

35. *Scymnus (Pullus) phylloides*, spec. nov.

Fig. 6

Types. Holotype: ♂, No. 910523-2, Taiwan (Fenchihu), 3-VI-1977, J. Klapperich (ZSM).

Description

Length: 1.53 mm, width: 1.06 mm.

Body small, oval, moderately convex with yellowish-white pubescence, arranged S-shaped on elytra. Body overall reddish-brown.

Punctuation on head fine, punctures smaller than facets; pronotal punctures similar to those on head, separated by 1-2 × of their diameter; elytral punctures coarse, separated by half of their diameter; elytron with distinct callus, without rows of coarse punctures. Prosternum with carinae, extending to anterior margin, parallel, length about 2 × width at base. Postcoxal line complete, weakly arched, extending to 3/4 length of 1st abdominal segment; area surrounded by the line slightly less coarsely punctured, smooth along the line. Hind margin of segment V round, of segment VI straight, slightly emarginate in male.

Male genitalia. Siphon relatively long with short outer process and long inner process of siphonal capsule; apex of siphon simple. Tegmen slender with long trabe; median piece widest at base, tapering gradually in basal $\frac{2}{3}$ and then distinctly to tip in lateral aspect, distinctly longer than lateral lobes; lateral lobes widest at middle, narrow at base in lateral aspect.

Remarks. In China several small brown species occur, but the new species can be distinguished from others by its male genitalia, postcoxal line, and coarse facets of eyes.

36. *Scymnus (Pullus) takasago* Kamiya, 1965

Specimens examined: 359 exs., Fenchihu, from IV-VI, 1977.

Distribution: Taiwan.

37. *Scymnus (Pullus)* sp.

Specimens examined: 53 exs., from Fenchihu (1.400 m) during 9-VI/13-VI-1977.

Remarks. This is an undescribed species that will be described elsewhere.

38. *Scymnus (Pullus) pangii* Fürsch, 1989

Scymnus (Nipponopullus) hoocalis Pang & Gordon, 1986: 182.

Scymnus (Pullus) notus Pang & Pu, 1990: 337.

Specimens examined: 5♂♂, 8♀♀, 23-V-1977, Shanmei (600 m).

Distribution: Taiwan, Guangdong, Hainan, Guangxi.

39. *Scymnus (Pullus) centralis* Kamiya, 1965.

Scymnus (Scymnus) prosericatus Pang, 1988: 385.

Specimens examined: 94 exs., Fenchihu, J. Klapperich from 9-IV/13-VI-1977.

Distribution: Taiwan, Guangdong, Hainan. Vietnam.

Remarks. Sasaji (1965) described this species as a member of *Scymnus (Pullus)*, and I examined many examples, of which a few have complete postcoxal line. Moreover, I also examined additional 30 examples from Fenchihu (Taiwan, J. Klapperich, 9-IV/13-VI-1977), which are identical with *S. centralis*, except for colouration (overall brown) and fine punctures on lateral part of 1st abdominal segment. These specimens are tentatively included in this species.

40. *Scymnus (Pullus) novenus*, spec. nov.

Fig. 7

Types. Holotype: ♀, No. 920402-2, 10-VI-1977, Alishan (2.400 m), J. Klapperich leg.

Description

Body length: 2.59 mm, width: 1.65.

Body elongate, oval, moderately convex with yellowish-white pubescence. Body overall brown, but median part of pterothorax dark brown and elytra with 9 black spots: one pair at calli, nearly heart-shaped, connected with basal margin; one discal spot, situated in anterior $\frac{1}{3}$ of elytral length, round; one pair near centre of elytra, elongately oval; one pair at lateral margin, situated at about half of length of elytra, not connected with lateral sides of elytra, rhombic; one pair situated near apex of elytra, round.

Dorsal punctures nearly uniform, about the size of facets, separated by about their diameter. Prosternal carinae straight, extending to anterior margin, anteriorly moderately convergent, length

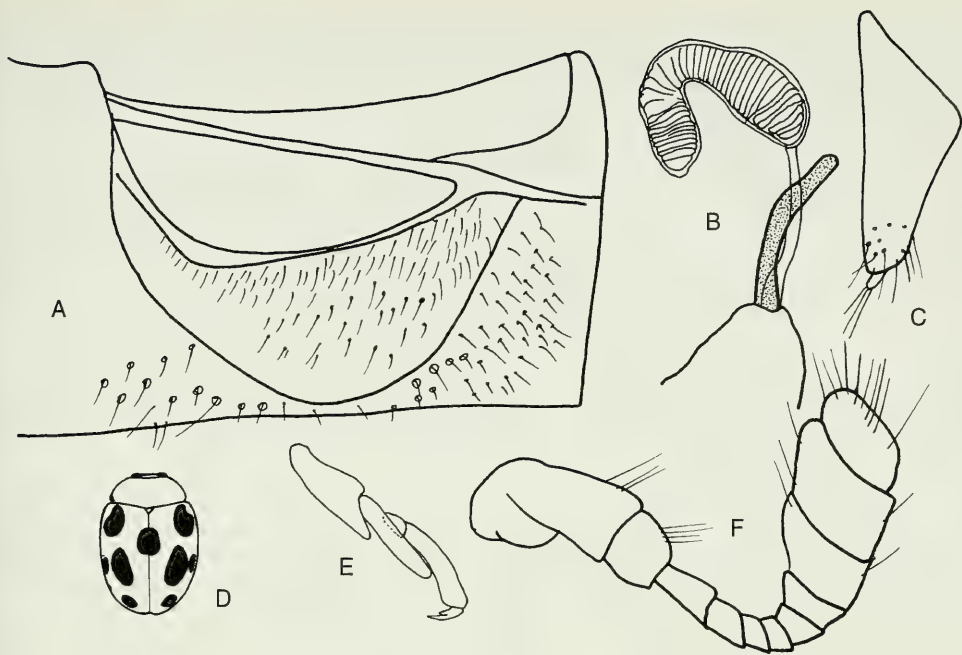


Fig. 7. *Scymnus (Pullus) novenus*, spec. nov. A. First abdominal segment; B. Receptaculum seminis, spermduct and infundibulum; C. Hemisternite; D. Outline of the body; E. Tarsus; F. Antenna.

about 2.5 times of width at base. Postcoxal line complete, extending to hind margin of 1st abdominal segment; area surrounded by the line finely punctured with long setae, narrowly smooth along the line. Apical margins of segments V, VI rounded.

Female genitalia as figured.

Remarks. The colouration of this new species is very peculiar in the genus *Scymnus*, it is therefore easily separable from other species.

41. *Scymnus (Pullus) posticalis* Sicard, 1912

Specimens examined: 2♂♂, 1♀, Taipei, 3-IV-1977; 1♀, Fenchihu, 23-IV-1977; 1♂, 25-V-1977, Fenchihu; 2♂♂, 1♀, Wulai, 5-IV-1977; 3♂♂, 2♀♀, 6-V-1977, Yangmingshan-Gebirge.

Distribution: Shaanxi, Taiwan, Yunnan, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Sichuan; Myanmar (formerly Burma), Japan, Vietnam.

42. *Scymnus (Pullus) sodalis* Weise, 1923

Specimens examined: 75 exs, from Fenchihu (1400 m), Taipei (30 m), Wulai (200 m), Shanmei (600 m) during 3-VI/13-VI-1977.

Distribution: Taiwan, Guandong, Fujian, Zhejiang, Jiangsu; Japan, India, Nepal, Vietnam.

43. *Scymnus (Pullus) petalinus*, spec. nov.

Fig. 8

Types. Holotype: ♂, No. 910515-4, Fenchihu (1.400 m), 13-IV-1977, J. Klapperich leg. (ZSM). - Paratypes: 2♀♀, same data as holotype (SCAU, ZSM).

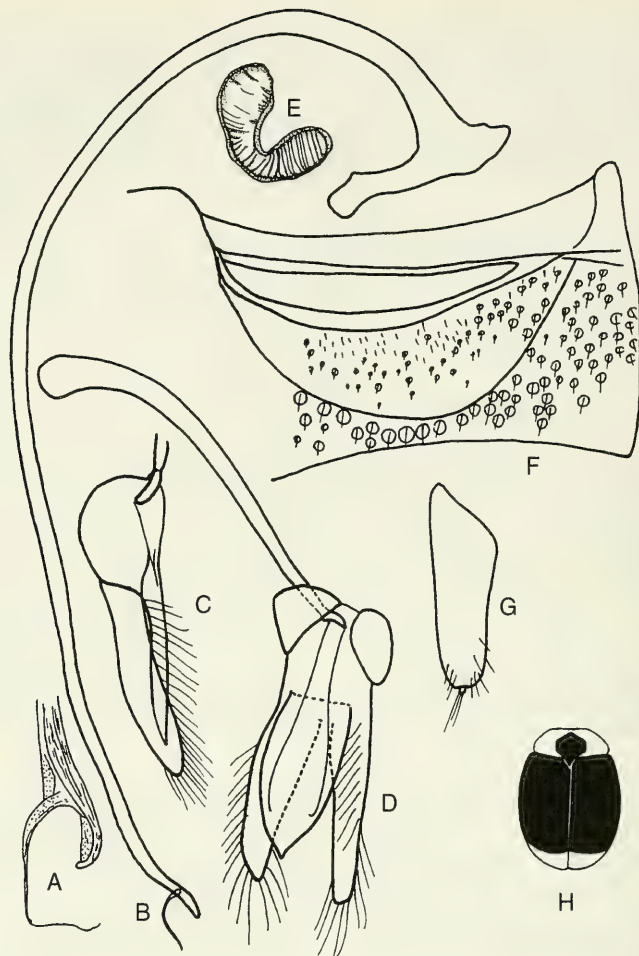


Fig. 8. *Scymnus (Pullus) petalinus*, spec. nov. A. Apex of siphus; B. Siphus; C. Tegmen, lateral aspect; D. ditto, ventral aspect; E. Receptaculum seminis; F. First abdominal segment; G. Hemisternite; H. Outline of the body.

Description

Length: 2.06-2.35 mm, width: 1.47-1.65 mm.

Body oval, moderately convex with yellowish-white pubescence. Head yellowish-brown with grey eyes; pronotum yellowish-brown with a black basal mark; scutellum black; elytra black with posterior $\frac{1}{4}$ yellowish-brown; underside including legs brown except pterothorax black.

Interocular margins slightly arcuate, separated by about $\frac{3}{5}$ of width of head; puncturation on head and pronotum fine and dense, punctures separated by $0.5-1.0 \times$ of their diameter; elytral punctures coarser than those on pronotum, separated by their diameter; elytron with indistinct rows of coarse punctures near suture. Prosternal carinae extending to anterior margin, anteriorly distinctly convergent, length about $2 \times$ width at base. Postcoxal line complete, extending to $\frac{4}{5}$ of length of 1st abdominal segment; area surrounded by the line irregularly punctured, coarser posteriorly, narrowly smooth along the line; punctures on median part of segments I-II finer than those on lateral parts. Hind margin of segment V nearly straight, slightly rounded in male, rounded in female.

Male genitalia. Siphus moderately slender with indistinct outer process and long inner process of siphonal capsule; apex of siphus slightly curved with a thread-like appendix at outer surface. Tegmen relatively stout; lateral lobes broad, median piece flattened in lateral aspect; median piece shorter than lateral lobes, boat-shaped with a pointed tip in ventral view.

Remarks. There are many species of *Scymnus* that have the apex of siphon with thread-like appendix. The new species resembles *S. (Pullus) sodalis* (Weise, 1923), but can be easily separated from the other species by the flattened median piece of tegmen which is distinctly shorter than the lateral lobes.

44. *Scymnus (Pullus) leo* Yang, 1978

Specimens examined: 1♂, 15-IV-1977; 1♀, 13-VI-1977, both from Fenchihu.
Distribution: Taiwan.

45. *Scymnus (Pullus) bistortus*, spec. nov.

Fig. 9

Types. Holotype: ♂, No. 910522-1, Taiwan (Alishan, 2,400 m), 10-VI-1977, J. Klapperich leg. (ZSM). - Allotype: ♀, same data as holotype (ZSM). - Paratypes: 1♂, 7♀, same data as holotype (ZSM); 1♂, 2♀, Taiwan (Alishan, 2,400 m), 28-IV-1977 (SCAU).

Description

Length: 1.71-2.29 mm, width: 1.18-1.41 mm.

Body elongately oval, relatively weakly convex with yellowish-white pubescence. Head brown, dark towards vertex with grey eyes; or head black with brown clypeus; pronotum black with antero-lateral corners more or less widely brown, or entirely black; scutellum black; elytra black with less than posterior $\frac{1}{4}$ brown; venter black or dark-brown.

Interocular margins arcuate, separated by $1.5 \times$ width of eye; puncturation on head slightly coarser than facets, denser along eyes, punctures separated by their diameter at centre of frons. Pronotal punctures similar to those on frons in size, separated by their diameter; elytral punctures much coarser than those on pronotum, separated by half of their diameter, elytron without rows of coarse punctures. Prosternum with intercoxal carinae extending to anterior margin, distinctly convergent anteriorly, length about $2.5 \times$ width at base. Postcoxal line complete, extending to $\frac{2}{3}$ of length of 1st abdominal segment; area surrounded by the line irregularly punctured, coarser posteriorly, widely smooth along the line; punctures on median part of segments I-II much smaller than lateral parts. Hind margin of segments V-VI both widely emarginate in male, rounded in female.

Male genitalia. Siphon moderately stout with short outer process and long inner process of siphonal capsule; siphon strongly curved at base; apex of siphon very characteristic, first hooked and then swirled. Tegmen stout with median piece longer than lateral lobes; median piece divergent at base, then convergent and gradually tapering to tip in ventral aspect.

Remarks. This species is easily distinguished from the known species occurring in China by almost entirely black body, almost parallel sides of body, and characteristic male genitalia.

* 46. *Scymnus (Pullus) oestocraerus* Pang & Huang, 1985

Specimens examined: 4♂♂, 5♀♀, 15-IV-1977; 1♂, 1♀, 30-IV-1977; 4♂♂, 5♀♀, 14-V-1977; 1♂, 1♀, 3-VI-1977; 4♂♂, 23-IV-1977; 1♂, 1♀, 8-V-1977; 3♂♂, 4♀♀, 19-V-1977; 1♂, 1♀, 25-V-1977; 1♂, 5♀♀, 13-VI-1977, all from Fenchihu.
Distribution: Fujian, Taiwan; Vietnam.

47. *Scymnus (Pullus) yangi* Yu & Pang, 1993

Scymnus (Pullus) bicolor Yang, 1978: 114 (preoccupied by Philippi, 1854).

Scymnus (Pullus) endocoryncus Pang & Huang, 1986: 62.

Scymnus (Pullus) vinhphuensis Hoang, 1982: 152.

Specimens examined: 1♂, 2♀♀, Yangmingshan-Gebirge, 6-V-1977; 1♀, Fenchihu, 13-IV-1977; 1♀, 15-IV-1977; 1♂, Fenchihu, 23-IV-1977; 3♀♀, Fenchihu, 30-IV-1977; 1♀, Fenchihu, 14-V-1977; 4♀♀, Fenchihu, 19-V-1977; 1♀, Fenchihu, 25-V-1977; 1♂, 1♀, Fenchihu, 7-VI-1977.

Distribution: Taiwan, Zhejiajing, Fujian, Guangdong, Hainan; Vietnam.

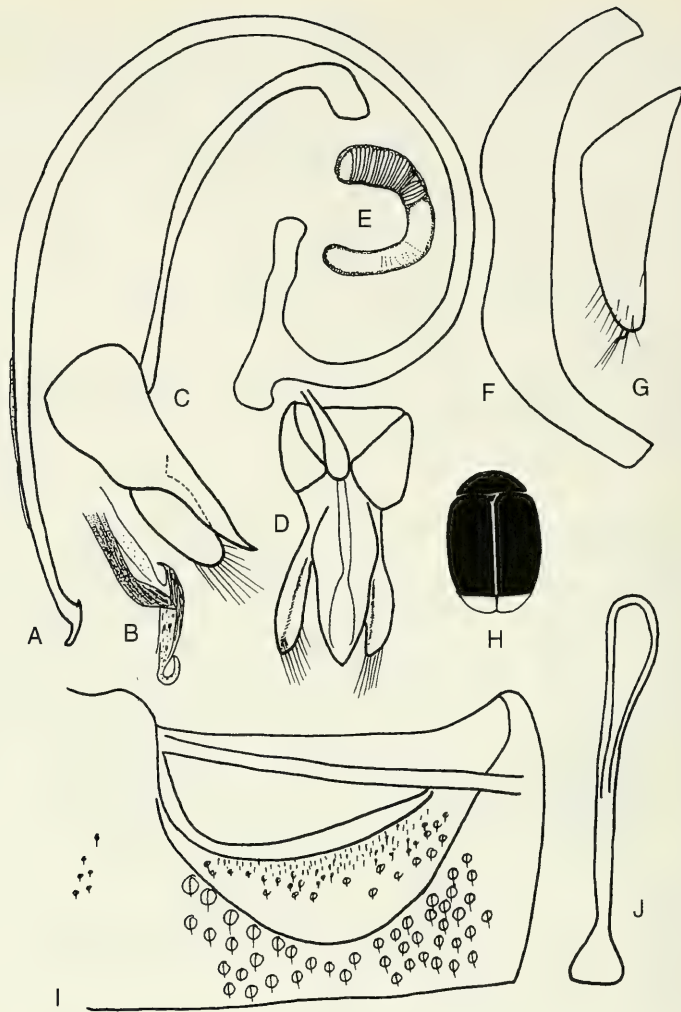


Fig. 9. *Scymnus (Pullus) bistortus*, spec. nov. A. Siphus; B. Apex of siphus; C. Tegmen, lateral aspect; D. ditto, ventral aspect; E. Receptaculum seminis; F. Sixth abdominal segment of ♂; G. Hemisternite; H. Outline of the body; I. First abdominal segment; J. Ninth sternite of ♂.

48. *Scymnus (Pullus) dorcatomoides* Weise, 1879

Specimens examined: 16♂♂, 11♀♀, Alishan, 10-VI-1977, J. Klapperich.

Distribution: Taiwan, Fujian; Japan, Vietnam.

Remarks. The examined specimens are variable in colouration (dark parts of the body might become light) and the length of median piece (from $\frac{2}{3}$ to $\frac{4}{5}$ of length of lateral lobes).

* 49. *Scymnus (Pullus) klapperichi* Pang & Gordon, 1986

Specimen examined: 1♂, 10-V-1977, Fenchihu (1.400 m).

Distribution: Taiwan, Fujian, Guangxi.

50. *Scymnus (Parapullus) secula* Yang, 1978

Specimens examined: 5♂♂, 9♀♀, Taiwan (Alishan), 10-VI-1977.

Distribution: Taiwan.

51. *Scymnus (Parapullus) alishanensis* Pang & Yu, 1993

Specimens examined: 5♂♂, 1♀, 10-VI-1977, Alishan (2.400 m), J. Klapperich.

Distribution: Taiwan.

52. *Scymnus (Neopullus) brunnescens* Motschulsky, 1866

Specimens examined: 1♀, Taipei, 10-IV-1977; 3♂♂, 2♀♀, 8-V-1977; 2♂♂, 3♀♀, 10-V-1977; 8 exs., 25-V-1977; 2♀♀, 3-VI-1977; 1♂, 1♀, 13-VI-1977, all from Fenchihu.

Distribution: Guangdong, Fujian, Taiwan; Ceylon, India.

Remarks. *Scymnus brunnescens* has been synonymized with *fuscatus* by Sasaji (1971: 172), but actually it is a valid species (Iablokoff-Khnzorian, 1972: 172). It is separable from *fuscatus* by its somewhat triangular median piece in ventral aspect, which is equal in length to the lateral lobes, and by the apex of siphon with a thread-like appendix.

53. *Aspidimerus esakii* Sasaji, 1968

Specimens examined: 1♂, 19-V-1977; 2♂♂, 2♀♀, 25-V-1977; 1♀, 3-VI-1977; 1♂, 7-VI-1977; 1♂, 1♀, 13-VI-1977 from Fenchihu (1.400 m).

Distribution: Taiwan, Guangxi.

54. *Cryptogonus orbiculus* (Gyllenhal, 1801)

Specimens examined: 1♂, 2-V-1977; 3♂♂, 23-V-1977, both from Shanmei (600 m); 1♂, 6-V-1977, Yangmingshan-Gebirge (Taipei); 1♂, 4♀♀, 3-IV-1977, Taipei (30 m); 2♀♀, 5-IV-1977, Wulai (Taipei, 200 m).

Distribution: Widely distributed in China; Japan, India, Indonesia, Malaysia, Myanmar, Sri Lanka, Micronesia.

55. *Cryptogonus postmedialis* Kapur, 1948

Specimens examined: 1♂, 11-IV-1977; 1♂, 15-IV-1977, both from Fenchihu (1.400 m).

Distribution: Sichuan, Taiwan, Fujian, Guangdong; Myanmar, India.

56. *Cryptogonus angusticarinatus* Sasaji, 1968

Specimens examined: 1♂, 5-IV-1977, Fenchihu (1.400 m); 2♀♀, 2-V-1977, Shanmei (600 m); 2♂♂, 2♀♀, 5-IV-1977, Taipei (30 m).

Distribution: Taiwan, Guangdong.

57. *Cryptogonus ohtai* Sasaji, 1968

Specimens examined: 4♂♂, 6♀♀, 3-IV-1977, Taipei (30 m); 1♂, 23-V-1977, Shanmei (600 m).

Distribution: Taiwan.

58. *Cryptogonus horishanus* (Ohta, 1929)

Specimens examined: 3♂♂, 3-IV-1977, Taipei (30 m).

Distribution: Gansu, Zhejiang, Sichuan, Taiwan, Fujian, Guangdong; Japan.

59. *Cryptogonus kurosawai* Sasaji, 1968

Specimens examined: 1♀, 9-IV-1977; 1♀, 13-VI-1977, both from Fenchihu (1.400 m).

Distribution: Taiwan.

60. *Cryptogonus robustus*, spec. nov.

Fig. 10

Types. Holotype: ♂ (3-IV-1977, Taipei (30 m)). - Paratypes: 4♂♂, (same data as holotype); 1♂, 23-V-1977, Shanmei (600 m), J. Klapperich leg. (ZSM, one in SCAU).

Description

Body length: 2.29-2.53 mm, width: 1.79-1.88 mm.

Body oval, dorsal surface strongly convex with whitish pubescence. Head yellowish-brown, but clypeus black and frons usually with black area, or even the black marking enlarged leaving only vertex brown; pronotum black with very narrow anterior margin reddish-brown, sometimes anterio-lateral corners yellowish-brown; elytra black with a pair of yellowish-brown discal spots, rounded, situated nearer to apex than to base of elytron; their distance to suture about $\frac{1}{2}$ to that of lateral margin. Underside black; legs black with dark-brown tip of femora and brown tarsi.

Interocular margins of frons weakly arcuate and anteriorly slightly convergent in anterior part. Prosternum with distinct carinae which are slightly convergent in middle. Elytral punctures fine, separated by $1.5 \times$ their diameter. Hind margin of segment VI of male rounded, but straight or very slightly emarginate in middle.

Male genitalia. Siphon short, strongly curved in basal half. Siphonal capsule short and stout, nearly rectangular, outer process distinctly longer than the indistinct inner process. Apex of siphon distinctly narrowing, hook-like. Tegmen relatively stout, median piece widest at base, gently narrowed to a rounded tip in ventral aspect.

Remarks. The new species resembles *C. orbiculus*, but is easily separable from the latter by the short siphon with nearly rectangular siphonal capsule. It also resembles *C. quadrigulatus* (Weise, 1895) in the structure of the male genitalia, but differs from the latter by the position of the discal spots on elytra and by the hook-like apex of siphon that narrows distinctly.

Subfamily Chilocorinae

61. *Platynaspidius maculosus* (Weise, 1910)

Specimens examined: 1♂, 1♀, 3-VI-1977, Taipei (30 m); 1♂, Yangmingshan-Gebirge (Taipei).

Distribution: Widely distributed in China.

62. *Platynaspidius babai* Sasaji, 1988

Specimen examined: 1♀, 5-IV-1977, Wulai (Taipei, 200 m).

Distribution: Taiwan.

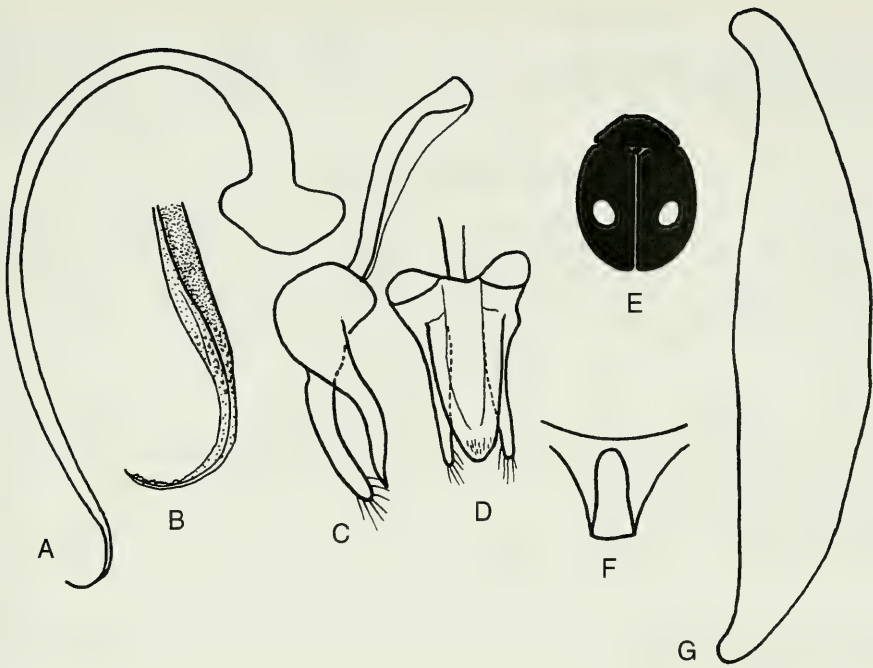


Fig. 10. *Cryptogonus robustus*, spec. nov. A. Siphon; B. Apex of siphon; C. Tegmen, lateral aspect; D. ditto, ventral aspect; E. Outline of the body; F. Median part of prosternum. G. Sixth abdominal segment of ♂.

63. *Chilocorus shirozui* Sasaji, 1968

Specimen examined: 1 ♀, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan.

64. *Chilocorus alishanus* Sasaji, 1968

Specimens examined: 1 ♂, 23-IV-1977; 1 ♂, 1 ♀, 28-IV-1977; 1 ♀, 30-IV-1977; 1 ♀, 8-V-1977, all from Fenchihu (1.400 m); 4 ♀ ♀, 10-VI-1977, Alishan (2.400 m).

Distribution: Taiwan, Yunnan.

65. *Telsimia nigra* (Weise, 1879)

Specimens examined: 1 ♂, 9-IV-1977; 1 ♂, 10-IV-1977; 1 ♂, 1 ♀, 11-IV-1977; 1 ♂, 15-IV-1977; 2 ♂ ♂, 23-IV-1977; 1 ♂, 2 ♀ ♀, 30-IV-1977; 1 ♂, 19-V-1977; 2 ♀ ♀, 13-VI-1977, all from Fenchihu (1.400 m).

Distribution: Taiwan, Fujian; Japan.

*** 66. *Telsimia nagasakiensis* Miyatake, 1978**

Specimens examined: 1 ♂, 3-IV-1977, Taipei (30 m); 1 ♀, 2-V-1977, Shanmei (600 m).

Distribution: Taiwan; Japan.

67. *Telsimia scymnoides* Miyatake, 1978

Specimens examined: 1♂, 9-IV-1977; 1♂, 2♀♀, 10-IV-1977; 2♂♂, 25-V-1977, all from Fenchihu (1.400 m).
Distribution: Taiwan.

Subfamily Coccinellinae

68. *Coccinella septempunctata* Linnaeus, 1758

Specimens examined: 3 exs. 11-IV-1977; 5 exs., 15-IV-1977; 7 exs., 23-IV-1977; 2 exs., 30-IV-1977; 2 exs., 8-V-1977; 1 ex., 14-V-1977; 1 ex., 23-V-1977; 1 ex., 3-VI-1977; 10 exs., 13-VI-1977, Fenchihu (1.400 m).
Distribution: Widely distributed in China; Palaearctic Region, America.

69. *Illeis koebelei* Timberlake, 1943

Specimens examined: 4 exs., 2-V-1977; 4 exs., 23-V-1977, both from Shanmei (600 m); 6 exs., 3-IV-1977, Taipei (30 m); 1 ex., 30-IV-1977; 3 exs., 10-V-1977; 5 exs., 14-V-1977; 2 exs., 8-V-1977; 2 exs., 19-V-1977; 1 ex., 25-V-1977, 1 ex., 13-VI-1977, all from Fenchihu (1.400 m).
Distribution: Fujian, Guandgdong, Guangxi, Yunnan, Taiwan; Japan.

*** 70. *Illeis shensiensis* Timberlake, 1943**

Specimens examined: 2 exs., Alishan; 35 exs., from Fenchihu during 10-IV/7-VI-1977.
Distribution: Shaanxi, Yunnan, Taiwan.

Remarks. The above two species are co-existent at the altitude of 1.400 m (Fenchihu), but those specimens occurring in Taipei (30 m) and Shanmei (600 m) belong to the former and those from Alishan (2.400 m) to the latter.

71. *Halyzia sanscrita* Mulsant, 1853

Specimens examined: 2♂♂, 28-IV-1977; 2♂♂, 10-VI-1977, all from Alishan (2.400 m).
Distribution: Kansu, Sichuan, Hebei, Shaanxi, Zhejiang, Taiwan, Fujian, Guizhou, Yunnan, Tibet; India, Yemen.

72. *Macroilleis hauseri* (Mader, 1930)

Specimens examined: 10 exs., 10-V-1977; 4 exs., 14-V-1977; 2 exs., 25-V-1977, all from Fenchihu (1.400 m).
Distribution: Widely distributed in China.

73. *Lemnia biplagiata* (Swartz, 1808)

Specimens examined: 2♂♂, 1♀, 2-V-1977; 16♂♂, 21♀♀, 23-V-1977, all from Shanmei (600 m).
Distribution: Zhejiang, Jiangxi, Sichuan, Taiwan, Fujian, Guangdong, Guangxi, Yunnan, Tibet; Japan, Korea, India, Myanmar, Thailand, Nepal, Vietnam, Malaysia, Philippines, Indonesia.

74. *Lemnia (Synia) melanaria* (Mulsant, 1850)

Specimen examined: 1♀, 23-V-1977, Shanmei (600 m).
Distribution: Gansu, Shaanxi, Hubei, Sichuan, Taiwan, Fujian, Guangxi, Guangdong, Guizhou, Yunnan, Tibet; India, Sri Lanka, Vietnam, Philippines.

75. *Lemnia (Artemis) circumusta* (Mulsant, 1850)

Specimens examined: 1 ♀, 5-IV-1977, Wulai (Taipei, 200 m); 1 ♀, 2-V-1977, Shanmei (600 m).

Distribution: Taiwan, Guangxi, Hainan, Yunnan; Thailand, Philippines, India.

76. *Harmonia dimidiata* (Fabricius, 1781)

Specimen examined: 1 ♀, 6-V-1977, Yangmingshan-Gebirge (Taipei).

Distribution: Sichuan, Hunan, Taiwan, Fujian, Guangdong, Guangxi, Yunnan, Tibet; Japan, Nepal, India, Indonesia.

77. *Harmonia sedecimnotata* (Fabricius, 1801)

Specimens examined: 3 ♀ ♀, 11-IV-1977; 2 exs., 10-IV-1977; 7 exs., 28-IV-1977; 1 ♂, 10-V-1977, all from Fenchihu (1.400 m); 1 ♀, 10-VI-1977, Alishan (2.400 m).

Distribution: Sichuan, Taiwan, Guangdong, Guangxi, Hainan, Guizhou, Yunnan, Tibet; Philippines, Indonesia.

78. *Harmonia octomaculata* (Fabricius, 1781)

Specimens examined: 1 ♂, 7-VI-1977; 2 ♀ ♀, 13-VI-1977, both from Fenchihu (1.400 m).

Distribution: Widely distributed in China; Japan, India, SE Asia to Australia.

79. *Propylea japonica* (Thunberg, 1781)

Specimens examined: 1 ♀, 3-IV-1977, Taipei (30 m); 1 ♀, 15-IV-1977; 1 ♀, 19-IV-1977; 4 ♀ ♀, 23-IV-1977; 2 ♂ ♂, 30-IV-1977; 1 ♂, 5-VI-1977, Fenchihu (1.400 m).

Distribution: Widely distributed in China; India, Palaearctic region.

80. *Propylea luteopustulata* (Mulsant, 1850)

Specimens examined: 4 exs., 11-IV-1977; 1 ex., 23-IV-1977; 1 ex., 30-IV-1977; 2 exs., 10-V-1977; 1 ♀, 14-V-1977; 1 ♂, 25-V-1977; 1 ex., 3-VI-1977; 1 ex., 7-VI-1977, all from Fenchihu (1.400 m).

Distribution: Shaanxi, Sichuan, Taiwan, Fujian, Guangdong, Yunnan, Tibet; India, Nepal, Myanmar, Thailand.

81. *Calvia muiri* (Timberlake, 1943)

Specimens examined: 3 exs., 23-IV-1977; 1 ex., 14-V-1977; 1 ex., 7-VI-1977; 1 ♀, 13-VI-1977, Fenchihu (1.400 m).

Distribution: Shaanxi, Guangxi, Yunnan, Taiwan; Japan.

82. *Oenopia takasago* (Sasaji, 1982)

Specimen examined: 1 ♀, 28-IV-1977, Alishan (2.400 m).

Distribution: Taiwan.

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